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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,692	06/06/2006	Michael Boyd	MC098YP	6637
210	7590	05/12/2009	EXAMINER	
MERCK AND CO., INC			KOSACK, JOSEPH R	
P O BOX 2000				
RAHWAY, NJ 07065-0907			ART UNIT	PAPER NUMBER
			1626	
			MAIL DATE	DELIVERY MODE
			05/12/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/581,692	BOYD ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph R. Kosack	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 February 2009.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 and 11 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

## DETAILED ACTION

Claims 1-9 and 11 are pending in the instant application .

### ***Amendments***

The amendment filed on February 13, 2009 has been acknowledged and has been entered into the application file.

### ***Previous Claim Rejections - 35 USC § 103***

Claims 1-7, 9, and 11 were previously rejected under 35 U.S.C. 103(a) as being unpatentable over Bayly et al. (CA 2477657 and WO 03/075836, which correspond to the same document).

Claims 1-9 and 11 were previously rejected under 35 U.S.C. 103(a) as being unpatentable over Bayly et al. (CA 2477657 and WO 03/075836, which correspond to the same document).

The Applicant has traversed the rejections on the grounds that the instant compounds have improved selectivity over cathepsins S and L with respect to a representative compound on Bayly et al.

The Examiner is left with no choice but to maintain the rejections. The data presented in the arguments does not detail where the data came from (is it from the documents themselves, or is it from a recent lab test in which a declaration is needed?) Additionally, the representative compound picked by the Applicant in Bayly et al. and the compound from the instant application selected by the Applicant have at least 4 substituents that are different. It cannot be determined which change leads to the

improved selectivity. Therefore, the *prima facie* case of obviousness stands, and the rejections are maintained.

***Previous Double Patenting Rejections***

Claims 1-9 and 11 were previously provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1 and 25 of copending Application No. 12/082,104, now published as US PGPUB 2008/0188529.

The Applicant has requested that the rejection be held in abeyance. The policy of the U.S. Patent and Trademark Office is to make all applicable rejections at the start of prosecution to allow for compact prosecution. A rejection may not be held in abeyance for the sole reason that allowable subject matter has not yet been identified. Therefore, the rejection is maintained.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

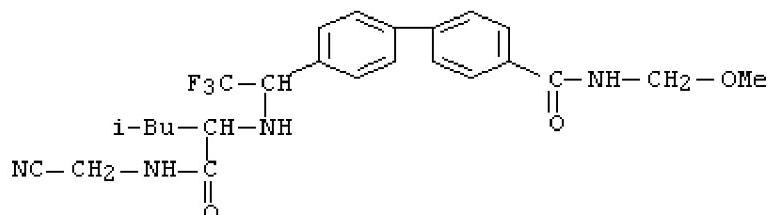
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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayly et al. (CA 2477657 and WO 03/075836, which correspond to the same document).

Bayly et al. teach a compound of the formula



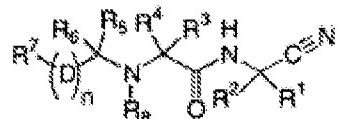
, which corresponds to the claims where R1 and R2 are hydrogen, R3 is C4 alkyl, R4 is C1 alkyl substituted with three halo, D is phenyl, E is phenyl, X is absent, R5 is hydrogen, R6 is C1 alkyl substituted with one -OR<sub>a</sub>, and R<sub>a</sub> is C1 alkyl. See the last compound of page 48. Bayly also teach the pharmaceutical composition and that the compound can be

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administered with an agent such as an organic bisphosphonate, an estrogen receptor modulator, an androgen receptor modulator, etc... See pages 84-86.

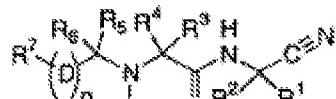
Bayly et al. do not teach where the amide group and the E group are separated by an X group such as a 3-8 membered cycloalkyl or CRaRb where Ra and Rb can be hydrogen.

While Bayly et al. do not teach specifically a compound where the X group would be present, Bayly et al. understand that this is a possibility from the generic formula



where D can be phenyl, C1-3 alkyl, or 3-8 membered cycloalkyl, among others. The 1 carbon linker where X would be CRaRb or 3-8 membered cycloalkyl where the point of attachment of the amide and the E group are the same would be an adjacently homologue of a 0 carbon linker as well. To those skilled in chemical art, one homologue is not such an advance over adjacent member of series as requires invention because chemists knowing properties of one member of series would in general know what to expect in adjacent members. In re Henze, 85 USPQ 261 (1950). Therefore, Bayly et al. shows the person of ordinary skill in the art to modify the specific compound from page 48 by inserting a linking group to generate another capthepsin inhibitor with a reasonable expectation of success.

Claims 1-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayly et al. (CA 2477657 and WO 03/075836, which correspond to the same document).



Bayly et al. teach a compound of the formula , which corresponds to the compounds such as the elected species where R1 and R2 combine to form a C3 cycloalkyl, R3 is C4 alkyl substituted with 1 halo, R4 and R5 are hydrogen, R6 is C1 alkyl substituted with two halo, n is 3, the first D is phenyl, the second D is phenyl, the third D is C3 cycloalkyl, R7 is C(O)N(R12)(R12), and each R12 is hydrogen. See the pages 4-7. Bayly et al. also teach the pharmaceutical composition and that the compound can be administered with an agent such as an organic bisphosphonate, an estrogen receptor modulator, an androgen receptor modulator, etc... See pages 84-86.

Bayly et al. do not specifically teach any of the species of the instant claim 8.

While Bayly et al. do not teach specifically a compound that falls within the species of claim 8, Bayly et al. understand that these compounds are a possibility from the detail of the generic formula. Bayly et al. provide numerous examples of compounds of the general formula that are useful as cathepsin inhibitors. Additionally, Bayly et al. do not provide any evidence of teaching away from the instant compounds. Hence, Bayly et al. invites the person of ordinary skill to generate other compounds of the genus with a reasonable expectation of success that the compounds generated would also act as cathepsin inhibitors.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9 and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1 and 25 of copending Application No. 12/082,104, now published as US PGPUB 2008/0188529. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same art specific subject matter.



corresponds to the compounds such as the elected species where R1 and R2 combine to form a C3 cycloalkyl, R3 is C4 alkyl substituted with 1 halo, R4 and R5 are hydrogen, R6 is C1 alkyl substituted with two halo, n is 3, the first D is phenyl, the second D is phenyl, the third D is C3 cycloalkyl, R7 is C(O)N(R12)(R12), and each R12 is hydrogen. '104 also teaches the pharmaceutical composition and that the compound

can be administered with an agent such as an organic bisphosphonate, an estrogen receptor modulator, an androgen receptor modulator, etc...

‘104 does not specifically any of the species of the instant claim 8.

While ‘104 does not teach specifically a compound that falls within the species of claim 8, ‘104 understands that these compounds are a possibility from the detail of the generic formula. ‘104 provides numerous examples of compounds of the general formula that are useful as cathepsin inhibitors. Additionally, ‘104 does not provide any evidence of teaching away from the instant compounds. Hence, ‘104 invites the person of ordinary skill to generate other compounds of the genus with a reasonable expectation of success that the compounds generated would also act as cathepsin inhibitors.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

Claims 1-9 and 11 are rejected.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Kosack whose telephone number is (571)272-5575. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Joseph R Kosack/  
Examiner, Art Unit 1626

/REI-TSANG SHIAO /  
Primary Examiner, Art Unit 1626